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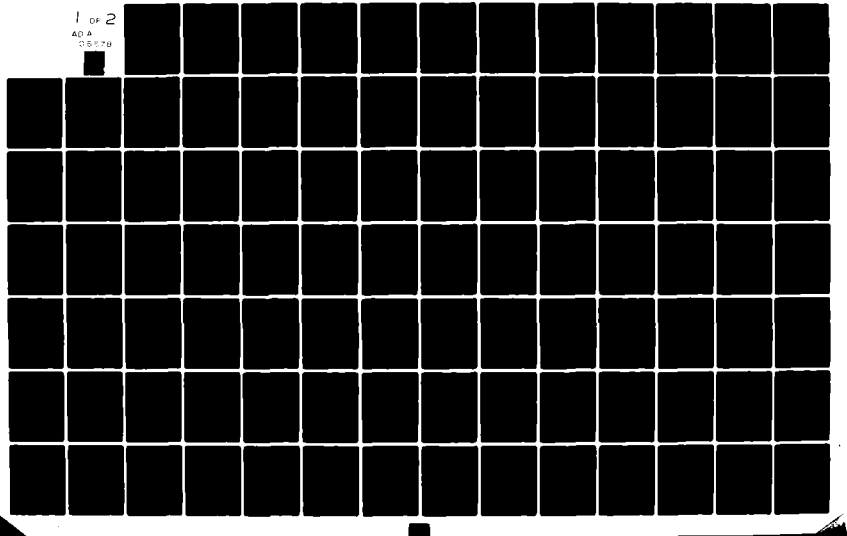

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BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 48

JULY - AUGUST 1980

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Vice Director for Foreign Intelligence
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20. ABSTRACT

This is the Soviet Laser Bibliography for July-August 1980, and is No. 48 in a continuing series on Soviet laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; theoretical aspects of advanced lasers; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; computer technology; holography; laser-induced chemical reactions; measurement of laser parameters; laser measurement applications; laser-excited optical effects; laser spectroscopy; beam-target interaction; and plasma generation and diagnostics.

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Introduction

This biblic graphy has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is July-August 1980, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are also included. Laser items from the popular or semipopular press are generally omitted.

For conveneience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry (RZh, KL) indicates the secondary source in which the citation was found as a bibliographic entry or abstract, but for which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.

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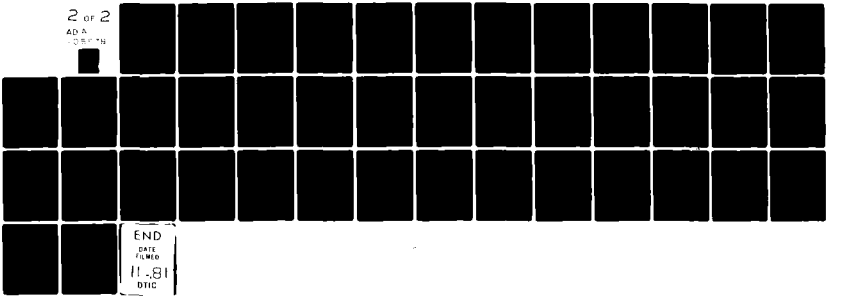

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IV. SOURCE ABBREVIATIONS

	(CIRC Codens)	
APP	(ATPLB)	Acta physica polonica
BWAT	(BWATA)	Biuletyn Wojskowej akademii technicznej J. Dabrowskiego
CJP	(CZYPA)	Czechoslovak Journal of Physics
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	(DANKA)	Akademiya nauk SSR. Doklady
DAN Tadzh	(DANTA)	Akademiya nauk Tadzhikskoy SSR. Doklday
EOM	(EOBMA)	Elektronnaya obrabotka materialov
ETP	(EXPPA)	Experimentelle Technik der Physik
FAiO	(IFAOA)	Akademiya nauk SSR. Izvestiya. Fizika atmosfery i okeana
F-KhMM	(FKMMA)	Fiziko-khimicheskaya mekhanika materialov
FMM	(FMMTA)	Fizika metallov i metallovedeniye
FGiV	(FGVZA)	Fizika goreniya i vzryva
FiKhOM	(FKOMA)	Fizika i khimiya obrabotka materialov
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Arm	(IAAFA)	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN B	(VABFA)	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskiya
IAN Uz	(IUZFA)	Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
I-FZh	(INFZA)	Inzhenerno-fizicheskiy zhurnal
IT	(IZTEA)	Izmeritel'naya tekhnika
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Gorn	(IVUOA)	Izvestiya vysshikh uchebnykh zavedeniy. Gornyy zhurnal
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye

IVUZ Radioelektr	(IVUZB)	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
KE	(KVEKA)	Kvantovaya elektronika
KhVE	(KHVKA)	Khimiya vysokikh energiy
KiK	(KNKTA)	Kinetika i kataliz
KL	(KNLTA)	Knizhnaya letopis'
KLDV	(KLDVA)	Knizhnaya letopis'. Dopolnitel'nyy vypusk
KSpF	(KRSFA)	Kratkiye soobshcheniye po fizike
MTT	(IZMTB)	Akademiya nauk SSSR. Izvestiya. Mekhanika tverdogo tela
NM	(IVNMA)	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OiS	(OPSPA)	Optika i spektroskopiya
OMP	(OPMPA)	Optiko-mekhanicheskaya promyshlennost'
PSS	(PSSAB)	Physica Status Solidi (A). Applied Research
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
RiE	(RAELA)	Radiotekhnika i elektronika
RRP	(RRPQA)	Revue roumaine de physique
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhGeofiz	(GZGFA)	Referativnyy zhurnal. Geofizika
RZhMekh	(RZMKA)	Referativnyy zhurnal. Mekhanika
RZhRadiot	(RZRAB)	Referativnyy zhurnal. Radiotekhnika
Sb1	Sbornik	Nelineynaya optika. Vavilovskaya konferentsiya. 6th. Novosibirsk, 20-22 June 1979. Trudy. Part 1. Novosibirsk, 1979.
Sb2		Nelineynaya optika. Vavilovskaya konferentsiya. 6th. Novosibirsk, 20-22 June 1979. Trudy. Part 2. Novosibirsk, 1979.
Sb3		Bilten na Sojuz na drushtvena na fizika SRM, v. 27, 1977.
Sb4		Chislennyye metody mekhaniki sploshnov sredy, no. 3, Novosibirsk, 1980.
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Sb24 Spektry i stroveniye molekul. Moskva, 1980.

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Sb27		Ustroystva, elementy i metody kompleksnoy mikrominiatyurizatsii. Radioelektronnaya apparatura. Kazan', 1979.
Sb28		Fizika plazmy. Sovetsko-frantsuzskiy seminar. 1st, Moskva, 1978. Moskva, 1979.
SCF	(SCEFA)	Studii si cercetari de fizica
TiEKh	(TEKHA)	Teoreticheskaya i eksperimental'naya khimiya
TiMF	(TMFZA)	Teoreticheskaya i matematicheskaya fizika
TKiT	(TKTEA)	Tekhnika kino i televedeniya
Tr1	Trudy	Fizicheskiy institut AN SSSR. Trudy, no. 116, 1980.
Tr2		Fizicheskiy institut AN SSSR. Trudy, no. 120, 1980.
Tr3		Leningradskiy institut kinoinzhenerov. Trudy, no. 35, 1979.
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Tr7		VNI kinofotoinstitut. Trudy, no. 95, 1979.
Tr8		Gosudarstvennyy astronomicheskiy institut. Trudy, no. 49, 1980.
Tr9		Trudy metrologicheskikh institutov SSSR, no. 236(296), 1979.
Tr10		TsNII morskogo flota. Trudy, no. 256, 1980.
Tr11		Fizicheskiy institut AN SSSR. Trudy, no. 119, 1980.
Tr12		Azerbaydzhanskiy universitet. Nauchnyye trudy. Seriya fiziko-matematicheskikh nauk, no. 6, 1979.
Tr13		L'vovskiy universitet. Vestnik. Seriya fizicheskaya, no. 15, 1980.
Tr14		Moskovskiy energeticheskiy institut. Trudy, no. 443, 1980.
Tr15		Fizicheskiy institut AN SSSR. Trudy, no. 127, 1980.
TVT	(TVTYA)	Teplofizika vysokikh temperatur
UFN	(UFNAA)	Uspekhi fizicheskikh nauk
UFZh	(UFIZA)	Ukrainskiy fizicheskiy zhurnal
VMU	(VMUFA)	Moskovskiy universitet. Vestnik. Fizika, astronomiya

ZhETF	(ZEIFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	(ZFPRA)	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhFKh	(ZFKHA)	Zhurnal fizicheskoy khimii
ZhNiPFiK	(ZNPFA)	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhPMTF	(ZPMFA)	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
ZhPS	(ZPSBA)	Zhurnal prikladnoy spektroskopii
ZhTF	(ZTEFA)	Zhurnal tekhnicheskoy fiziki
ZhTF P	(PZTFD)	Pis'ma v Zhurnal tekhnicheskoy fiziki
ZhVMMF	(ZVMFA)	Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki
ZL	(ZVDLA)	Zavodskaya laboratoriya

V. AUTHOR AFFILIATIONS

NS. Non-Soviet
0. Affiliation not given
1. Physics Institute imeni Lebedev, AN SSSR (Fizicheskiy institut imeni Lebedeva AN SSSR).
2. Moscow State University (Moskovskiy gosudarstvennyy universitet).
3. Institute of Physics, AN BSSR, Minsk (Institut fiziki AN BSSR).
4. Physicotechnical Institute im Ioffe, Leningrad (Fiziko-tekhnicheskiy institut im Ioffe).
5. Institute of Physics, AN UkrSSR, Kiev (Institut fiziki AN UkrSSR).
6. Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR).
7. State Optical Institute im Vavilov, Leningrad (Gosudarstvennyy opticheskiy institut im Vavilova).
10. Institute of Semiconductor Physics, Siberian Branch, AN SSSR, Novosibirsk Institut fiziki poluprovodnikov Sibirskogo otdeleniya AN SSSR).
11. Kazan'State University (Kazanskiy GU).
12. Leningrad State University (Leningradskiy GU).
13. Institute of Crystallography, AN SSSR, Moscow (Institut kristallografii AN SSSR).
15. Institute of Radio Engineering and Electronics, AN SSSR, Moscow (Institut radiotekhniki i elektroniki AN SSSR).
16. Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut).
17. Instutute of Problems of Mechanics, AN SSSR, Moscow (Institut problem mekhaniki AN SSSR).
18. Institute of General and Inorganic Chemistry im Kurnakov, AN SSSR, Moscow (Institut obshchey i neorganicheskoy khimii im Kurnakova AN SSSR).
19. Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut).
23. Instutute of Atomic Energy im Kurchatov, Moscow (Institut atomnoy energii im Kurchatova).
24. Moscow Higher Technical College im Bauman (Moskovskoye vyssheye tekhnicheskoye uchilishche im Baumana).
29. Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut).
30. Leningrad Instutute of Precision Mechanics and Optics (Leningradskiy institut tochnoy mekhaniki i optiki).
36. Physicotechnical Institute of Low Temperatures, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR).
38. Kazan' Physicotechnical Institute (Kazanskiy fiziko-tekhnicheskiy institut).
41. Rostov-on-Don State University (Rostovskiy-na-Donu GU).
44. Institute of Applied Physics, AN MSSR, Kishinev (Institut prikladnoy fiziki AN MSSR).
47. Siberian Physicotechnical Institute im Kuznetsov, Tomsk (Sibirskiy fiziko-tekhnicheskiy institut im Kuznetsova).
49. Vilnius State University (Vil'nyusskiy GU).
51. Kiev State University (Kiyevskiy GU).
59. Institute of Physics Research, AN ArmSSR (Institut fizicheskikh issledovaniy AN ArmSSR).
60. Institute of Physics, AN AzSSR (Institut fiziki AN AzSSR).
63. Institute of Physics, AN LatSSR (Institut fiziki AN LatSSR).
64. Institute of Atmospheric Physics, AN SSSR (Institut fiziki atmosfery AN SSSR).
66. Institute of Solid State Physics, AN SSSR (Institut fiziki tverdogo tela AN SSSR).

67. Institute of Physics of Chemistry, AN SSSR (Institut khimicheskoy fiziki AN SSSR).
69. Institute of Oceanography, AN SSSR (Institut okeanologii AN SSSR).
71. Institute of Applied Mathematics, AN SSSR (Institut prikladnoy matematiki AN SSSR).
72. Institute of Spectroscopy, AN SSSR (Institut spektroskopii AN SSSR).
74. Institute of High Temperatures, AN SSSR (Institut vysokikh temperatur AN SSSR).
75. Institute of Automation and Electronic Measurements, Siberian Branch, AN SSSR (Institut avtomatiki i elektrometrii SOAN).
78. Institute of Atmospheric Optics, Siberian Branch AN SSSR (Institut optiki atmosfery SOAN).
81. Physicomechanical Institute, AN UkrSSR (Fiziko-mekhanicheskiy institut AN UkrSSR).
84. Institute of Radiophysics and Electronics, AN UkrSSR (Institut radiofiziki i elektroniki AN UkrSSR).
86. Azerbaydzhan State University (Azerbaydzhanskiy GU).
87. Belorussian State University (Belorusskiy GU).
94. Gor'kiy State University (Gor'kovskiy GU).
98. Institute of Nuclear Physics at Moscow State University (Institut yadernoy fiziki pri Moskovskom GU).
99. Institute of Mechanics and Physics, Saratov (Institut mekhaniki i fiziki).
110. Leningrad Electrotechnical Institute (Leningradskiy elektrotekhnicheskiy institut).
114. L'vov State University (L'vovskiy GU).
116. Moscow Aviation Institute (Moskovskiy aviatsionnyy institut).
118. Moscow Physicotechnical Institute (Moskovskiy fiziko-tekhnicheskiy institut).
122. Scientific Research Institute of Physicochemistry im Karpov (NI fiziko-khimicheskiy institut im Karpova).
132. Tomsk State University (Tomskiy GU).
134. Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya).
135. Central Scientific Research Institute of Communications (Tsentral'nyy NII svyazi).
136. Uzhgorod State University (Uzhgorodskiy GU).
141. All Union Scientific Research Institute of Optophysical Measurements (VNII optiko-fizicheskikh izmereniy).
146. Yerevan Physics Institute (Yerevanskiy fizicheskiy institut).
148. Institute of Terrestrial Magnetism, the Ionosphere and Radiowave Propagation, AN SSSR (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR).
151. Kishinev State University (Kishinevskiy GU).
152. Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov).
159. Institute of Thermophysics, Siberian Branch, AN SSSR, Novosibirsk (Institut teplofiziki SOAN).
161. Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhnika, elektroniki i avtomatiki).
163. All Union Scientific Research Institute of Metrology im Mendeleyev (VNII metrologii im Mendeleyeva).
179. Moscow Institute of Fine Chemical Technology im Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii im Lomonosova).
180. Institute of Heat and Mass Exchange, AN BSSR (Institut teplo- i massoobmena AN BSSR).

184. Institute of Geochemistry and Analytical Chemistry im Vernadskiy, AN SSSR, Moscow (Institut geokhimii i analiticheskoy khimii im Vernadskogo AN SSSR).
188. All Union Scientific Research Institute of Single Crystals, Scintillation Materials and Extra Pure Chemical Substances, Khar'kov (VNII monokristallov, sresintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv).
190. Central Scientific Research Institute of the Maritime Fleet, Leningrad (Tsentral'nyy NII morskogo flota).
193. Institute of Theoretical and Applied Mechanics, Siberian Branch, AN SSSR, Novosibirsk (Institut teoreticheskoy i prikladnoy mekhaniki SOAN).
197. Tomsk Polytechnic Institute (Tomskiy politekhnicheskiy institut).
199. Moscow Institute of Electronic Machinery (Moskovskiy institut elektronnogo mashinostroyeniya).
200. Khar'kov Aviation Institute (Khar'kovskiy aviatsionyy institut).
202. Institute of Electronics, AN UzSSR, Tashkent (Institut elektroniki AN UzSSR).
207. Main Geophysical Observatory (Glavnaya geofizicheskaya observatoriya).
210. Institute of Physics, Siberian Branch, AN SSSR (Institut fiziki SOAN).
215. Physicotechnical Institute, AN TadzhSSR (Fiziko-tekhnicheskiy institut AN TadzhSSR).
216. Kazan' Aviation Institute (Kazanskiy aviatsionnyy institut).
220. Institute of Experimental Meteorology (Institut eksperimental'noy meteorologii).
223. Central Institute for the Advanced Training of Physicians (Tsentral'nyy institut usovershenstvovaniya vrachey).
227. Tashkent State University (Tashkentskiy GU).
231. Scientific Research Institute of Motion Pictures and Photography (NI kinofotoinstitut).
240. Odessa State University (Odesskiy GU).
248. Institute of Mechanics at Moscow State University (Institut mekhaniki pri Moskovskom GU).
276. Institute of Physics of the Earth im Shmidt, AN SSSR (Institut fiziki Zemli im Shmidta AN SSSR).
283. Institute of Physics of Metals, AN UkrSSR, Kiev (Institut metallofiziki AN UkrSSR).
287. Institute of Physical Chemistry, AN SSSR (Institute fizicheskoy khimii AN SSSR).
295. Institute of Chemical Kinetics and Combustion, Siberian Branch, AN SSSR, Novosibirsk (Institut khimecheskoy kinetiki i goreniya SOAN).
297. Institute of Chemistry, AN SSSR, Gor'kiy (Institut khimii AN SSSR).
304. Institute of Organic Chemistry, AN UkrSSR, Kiev (Institut organicheskoy khimii AN UkrSSR).
323. Leningrad Institute of Motion Picture Engineers (Leningradskiy institut kinoinzhenerov).
325. Scientific Research Institute of Physics, Rostov-on-Don (NII fiziki, Rostov-na-Donu).
334. Scientific Research Institute of Applied Physical Problems at Belorussian State University (NII prikladnykh fizicheskikh problem pri Belorusskom GU).
336. Scientific Research Institute of Nuclear Physics, Electronics and Automation at Tomsk Polytechnic Institute (NII yadernoy fiziki, elektroniki i avtomatiki pri Tomskom politekhnicheskom institute).
424. Voroshilovgrad Mechanical Engineering Institute (Voroshilovgradskiy mashinostroitel'nyy institut).

426. Institute of Applied Physics, AN SSSR, Gor'kiy (Institut prikladnoy fiziki AN SSSR).
438. Ryazan' State Pedagogical Institute (Ryazanskiy gos pedagogicheskiy institut).
445. All Union Scientific Research Institute of the Metrological Service, Moscow (VNII metrologicheskoy sluzhby).
446. Byurakan Astrophysics Observatory, AN ArmSSR (Byurakanskaya astrofizicheskaya observatoriya AN ArmSSR).
466. Institute of High-Current Electronics, Siberian Branch, AN SSSR, Tomsk (Institut sil'notochnoy elektroniki SOAN).
479. Institute of Inorganic Chemistry AN LatSSR (Institut neorganicheskoy khimii AN LatSSR).
481. Lutsk Pedagogical Institute (Lutskiy pedagogicheskiy institut).
484. Buryat Institute of the Natural Sciences, Buryat Branch of the Siberian Branch, AN SSSR (Buryatskiy institut yestestvennykh nauk Buryatskogo filiala SOAN).
486. Irkutsk State Pedagogical Institute (Irkutskiy gos pedagogicheskiy institut).
494. Vladimir Polytechnic Institute (Vladimirskiy politekhincheskiy institut).
511. Institute of Applied Problems in Mechanics and Mathematics, AN UkrSSR, L'vov (Institut prikladnykh problem mekhaniki i matematiki).
512. Institute of General and Inorganic Chemistry AN UkrSSR, Kiev (Institut obshchey i neorganicheskoy khimii AN UkrSSR).
521. Scientific Research Institute for Physics of Condensed Media, Yerevan State University (NII fiziki kondensirovannykh sred Yerevanskogo GU).
527. Institute of Catalysis, Siberian Branch, AN SSSR (Institut kataliza SOAN).
538. Moscow Institute of the National Economy (Moskovskiy institut narodnogo khozyaystva).
539. Department of Thermal Physics, AN UzSSR (Otdel teplofiziki AN UzSSR).
542. State Scientific Research Institute of Quartz Glass, Leningrad (Gos NII kvartsobogo stekla).
547. Kirov Polytechnic Institute (Kirovskiy politekhnicheskiy institut).
555. Dnepropetrovsk Mining Institute (Dnepropetrovskiy gornyy institut).
557. State Institute of Applied Chemistry, Leningrad (Gos institut prikladnoy khimii).
562. Kirovakan Chemical Plant (Kirovakanskiy khimicheskiy zavod).
563. Tomsk Pedagogical Institute (Tomskiy pedagogicheskiy institut).
564. Planning and Design Bureau of Electrohydraulics (Proyektno-konstruktornoye byuro elektrogidravliki).
565. Institute of Theoretical and Experimental Physics, Moscow (Institut teoreticheskoy i eksperimental'noy fiziki).
566. Drogobych State Pedagogical Institute (Drogobychskiy gos pedagogicheskiy institut).
567. Moscow Veterinary Academy im K.I. Skryabin (Moskovskaya veterinarnaya akademiya im K.I. Skryabina).
568. Institute of Mining AN KazSSR (Institute gornogo dela AN KazSSR).

VI. AUTHOR INDEX